

CLAIMS

What is claimed is:

1. An air compressor, comprising:
  - a pump for generating a supply of compressed air;
  - a motor coupled to the pump, the motor being configured to provide the pump with mechanical energy in order to cause the pump to generate the supply of compressed air;
  - an electrical system electrically coupled to the motor, said electrical system including:
    - a docking station for receiving a removable rechargeable battery;
    - an electrical supply connection device for connecting to a conventional electrical supply; and
    - a switch for varying the source of the electrical energy to be supplied to the motor between the battery and the conventional electrical supply,
  - wherein the electrical system is configured to charge a removable battery received in the docking station, if a removable battery is present and the electrical supply connection device is supplying electricity to the motor.
2. The air compressor of claim 1, wherein the switch automatically causes the motor to operate from a battery coupled to the docking station, if no electricity is supplied from the electrical supply connection device.
3. The air compressor of claim 1, wherein a battery, for which the docking station is configured to receive, is constructed for use with a plurality of battery operated tools.
4. The air compressor of claim 1, further comprising a rectifier electrically coupled to the electrical supply connection and the motor, the rectifier being configured for converting the conventional electrical supply to direct current.

5. The air compressor of claim 1, further comprising:
  - a rectifier electrically coupled to the electrical supply connection and the motor, the rectifier being configured for converting the conventional electrical supply to direct current; and
  - a voltage regulator electrically coupled to the motor, said voltage regulator being configured to convert the electrical supply received from the rectifier to a voltage substantially equal to a voltage for which the docking station is configured to receive from a removable battery.
6. The air compressor of claim 1, wherein the docking station is configured to receive a removable battery having a voltage in the range of 12V (twelve volts) to 24V (twenty-four volts).
7. The air compressor of claim 1, wherein the docking station is configured to receive a removable battery having a voltage of approximately 19.2V (nineteen point two volts).
8. The air compressor of claim 1, wherein the docking station is configured to receive a removable rechargeable battery, said battery being configured for implementation with at least one of a drill, a circular saw, a jig saw, a reciprocating saw, a flashlight, a router, and a miter saw.
9. The air compressor of claim 1, wherein the electrical system includes at least two docking stations, the electrical system being constructed to draw electricity in parallel from at least two rechargeable batteries individually received in the at least two docking stations.
10. The air compressor of claim 1, further comprising at least two pressure tanks

pneumatically coupled to the pump, wherein the first pressure tank of the at least two pressure tanks is constructed so as to be pneumatically isolated from the second of the at least two pressure tanks.

11. The air compressor of claim 1, wherein the conventional electrical supply is an alternating current supply providing electricity at substantially 115V (one hundred fifteen volts) and 60 Hz (sixty hertz).
12. The air compressor of claim 1, wherein the pump is constructed to provide compressed air in the range of 125 psi (one hundred twenty five pounds per square inch) to 175 psi (one hundred seventy five pounds per square inch).
13. The air compressor of claim 1, wherein the compressor is constructed to be hand carried by a user between jobsites.
14. The air compressor of claim 1, wherein the air compressor is configured to supply in the range of 200 (two hundred) to 400 (four hundred) 18 (eighteen) gauge brad nails per removable battery recharge.
15. The air compressor of claim 1, wherein the docking station is configured so as to minimize dust and debris from fouling the docking station.
16. The air compressor of claim 1, wherein the motor is configured to operate at a voltage substantially equal to the voltage for which the docking station is configured to receive from a removable battery.

17. An air compressor, comprising:
  - a pump for generating a supply of compressed air;
  - a motor coupled to the pump, the motor being configured to provide the pump with mechanical energy in order to cause the pump to generate the supply of compressed air;
  - an electrical system electrically coupled to the motor, said electrical system including:
    - a docking station for receiving a removable rechargeable battery;
    - an electrical supply connection device for connecting to a conventional electrical supply; and
    - a switch for varying the source of the electrical energy to be supplied to the motor between the battery and the conventional electrical supply, said switch being configured to automatically cause the motor to operate from a battery coupled to the docking station, if no electricity is supplied from the electrical supply connection device,
  - wherein the electrical system is configured to charge a removable battery received in the docking station, if a removable battery is present and the electrical supply connection device is supplying electricity to the motor.
18. The air compressor of claim 17, wherein a battery, for which the docking station is configured to receive, is constructed for use with a plurality of battery operated tools.
19. The air compressor of claim 17, further comprising a rectifier electrically coupled to the electrical supply connection and the motor, the rectifier being configured for converting the conventional electrical supply to direct current.
20. The air compressor of claim 17, further comprising:
  - a rectifier electrically coupled to the electrical supply connection and the motor, the rectifier being configured for converting the conventional electrical supply

to direct current; and

a voltage regulator electrically coupled to the motor, said voltage regulator being configured to convert the electrical supply received from the rectifier to a voltage substantially equal to a voltage for which the docking station is configured to receive from a removable battery.

21. The air compressor of claim 17, wherein the docking station is configured to receive a removable battery having a voltage in the range of 12V (twelve volts) to 24V (twenty-four volts).
22. The air compressor of claim 17, wherein the docking station is configured to receive a removable battery having a voltage of approximately 19.2V (nineteen point two volts).
23. The air compressor of claim 17, wherein the docking station is configured to receive a removable rechargeable battery, said battery being configured for implementation with at least one of a drill, a circular saw, a jig saw, a reciprocating saw, a flashlight, a router, and a miter saw.
24. The air compressor of claim 17, wherein the electrical system includes at least two docking stations, the electrical system being constructed to draw electricity in parallel from at least two rechargeable batteries individually received in the at least two docking stations.
25. The air compressor of claim 17, further comprising at least two pressure tanks pneumatically coupled to the pump, wherein the first pressure tank of the at least two pressure tanks is constructed so as to be pneumatically isolated from the second of the at least two pressure tanks.

26. The air compressor of claim 17, wherein the conventional electrical supply is an alternating current supply providing electricity at substantially 115V (one hundred fifteen volts) and 60 Hz (sixty hertz).
27. The air compressor of claim 17, wherein the pump is constructed to provide compressed air in the range of 125 psi (one hundred twenty five pounds per square inch) to 175 psi (one hundred seventy five pounds per square inch).
28. The air compressor of claim 17, wherein the compressor is constructed to be hand carried by a user between jobsites.
29. The air compressor of claim 17, wherein the air compressor is configured to supply in the range of 200 (two hundred) to 400 (four hundred) 18 (eighteen) gauge brad nails per removable battery recharge.
30. The air compressor of claim 17, wherein the docking station is configured so as to minimize dust and debris from fouling the docking station.
31. The air compressor of claim 17, wherein the air compressor is portable.

32. An air compressor, comprising:
  - a pump for generating a supply of compressed air;
  - a motor coupled to the pump, the motor being configured to provide the pump with mechanical energy in order to cause the pump to generate the supply of compressed air;
  - an electrical system electrically coupled to the motor, said electrical system including:
    - a battery docking station;
    - a removable rechargeable battery configured to be coupled to the battery docking station, said removable rechargeable battery being additionally constructed to be utilized with at least one power tool;
    - an electrical supply connection device for connecting to a conventional electrical supply; and
    - a switch for varying the source of the electrical energy to be supplied to the motor between the battery and the conventional electrical supply, said switch being configured to automatically cause the motor to operate from a battery coupled to the docking station, if no electricity is supplied from the electrical supply connection device,
  - wherein the electrical system is configured to charge the removable battery received in the docking station, if the removable battery is present and the electrical supply connection device is supplying electricity to the motor.
33. The air compressor of claim 32, further comprising a rectifier electrically coupled to the electrical supply connection and the motor, the rectifier being configured for converting the conventional electrical supply to direct current.
34. The air compressor of claim 32, further comprising:
  - a rectifier electrically coupled to the electrical supply connection and the motor, the rectifier being configured for converting the conventional electrical supply to direct current; and

a voltage regulator electrically coupled to the motor, said voltage regulator being configured to convert the electrical supply received from the rectifier to a voltage substantially equal to a voltage for which the docking station is configured to receive from a removable battery.

35. The air compressor of claim 32, wherein the battery is configured with a voltage in the range of 12V (twelve volts) to 24V (twenty-four volts).
36. The air compressor of claim 32, wherein the docking station is configured to receive a removable battery having a voltage of approximately 19.2V (nineteen point two volts).
37. The air compressor of claim 32, wherein the at least one power tool is selected from a group consisting of a drill, a circular saw, a jig saw, a reciprocating saw, a flashlight, a router, and a miter saw.
38. The air compressor of claim 32, wherein the electrical system includes at least two docking stations, the electrical system being constructed to draw electricity in parallel from at least two rechargeable batteries individually received in the at least two docking stations.
39. The air compressor of claim 32, wherein the conventional electrical supply is an alternating current supply providing electricity at substantially 115V (one hundred fifteen volts) and 60 Hz (sixty hertz).
40. The air compressor of claim 32, wherein the compressor is constructed to be hand carried by a user between jobsites.
41. The air compressor of claim 32, wherein the air compressor is configured to supply

in the range of 200 (two hundred) to 400 (four hundred) 18 (eighteen) gauge brad nails per removable battery recharge.

42. The air compressor of claim 32, wherein the docking station is configured so as to minimize dust and debris from fouling the docking station.
43. The air compressor of claim 32, wherein the air compressor is portable.

44. An air compressor, comprising:

- a pump for generating a supply of compressed air;
- a motor coupled to the pump, the motor being configured to provide the pump with mechanical energy in order to cause the pump to generate the supply of compressed air; and

means for causing the motor to operate from a removable battery power source, if a conventional power source is at least one of unavailable and inoperable, said causing means being additionally capable of charging a removable battery, if a removable battery is present and the conventional power supply is supplying electricity to the motor.